

# Nutrition care and its education

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## Valorisation

## Introduction

Nevertheless, the findings of this thesis have important insights and consequences for the teaching and learning of nutrition care in undergraduate medical education and also the provision of nutrition care in the hospital setting.

## Relevance

In this doctoral thesis we have undertaken a needs assessment of the situation of nutrition care and its education in the medical curriculum. The research has answered the general research question posed at the beginning i.e. what is the current practice of a) nutrition education for medical students and b) nutrition care of practicing doctors in Ghana? The findings bring to fore that nutrition education is inadequate in the medical curriculum in Ghana and that nutrition care is below the needs of patients. The research presented in this thesis also evaluated the perspectives of two important stakeholders of medical education i.e. medical students in training and doctors in practice. This approach granted us the opportunity to have a holistic and a comprehensive needs assessment of the situation of nutrition education in the curriculum. This resulted in our finding that both students and practicing doctors alike value nutrition education and consider it to be relevant and important to their training and practice as medical doctors. In addition, both have demonstrated their readiness to learn more about nutrition to cater for their inadequacies during their training.

We recognise that, the inadequacy in nutrition education in the medical curriculum is an age-old concern globally and also equally recognise efforts made elsewhere to help improve nutrition education in medical training. We thus suggest the need for all stakeholders, including the Ghana National Accreditation Board and the Medical and Dental Council of Ghana, to collaborate to help improve medical nutrition education in Ghana. Other stakeholders such as deans of medical schools, faculty, and students, the Ministry of Health, the Ghana Health Service, and the Ghana Medical Association should also be included in such a collaboration to help improve nutrition education. As have been done elsewhere the regulatory bodies (i.e. the National Accreditation Board and the Ghana Medical and Dental Council) should come out with nutrition syllabi for medical training and should provide a required number of hours for nutrition education for all medical schools in the country.

We have shown in this doctoral thesis that the nutrition knowledge of medical students vary by their level of training and tend to wane as they progress. Without reinforcement clinical students may not retain the nutrition knowledge they acquired during their pre-clinical training. These findings demonstrate the need for nutrition education to be applied throughout the entire medical curriculum. This will allow for reinforcement and application of nutrition knowledge learnt during pre-clinical education. This should be informed by a review of the entire curriculum to identify areas for the integration of nu-

trition content in the curriculum. Given the fact that the medical curriculum is overcrowded, integration of nutrition content through the entire curriculum may be an important way of improving nutrition education, allowing the acquisition of more nutrition content without increasing the contact hours of the entire medical curriculum.

In this doctoral thesis we have exhibited that the workplace setting is an important training/learning resource for nutrition care. Adding to the literature on workplace learning, practicing doctors have found their clinical practice as an important contributor to their current nutrition care competencies. In addition we also found that the modelling of nutrition care by superiors such as consultants, specialist, etc may also result in improved nutrition practice behaviour. A workplace culture of nutrition care provides a conducive environment for doctors to include nutrition care in their consultations with patients. We thus suggest that consultants, specialists and clinical teachers should model nutrition care, thereby encouraging junior doctors and medical students to have the confidence and the support to provide nutrition care in the practice setting.

Self-efficacy in nutrition care and attitudes towards nutrition care have been shown to be important determinants of nutrition practice and referral behaviour among practicing doctors. Among medical students, self-efficacy and attitudes towards nutrition care correlated in that those who felt self-efficacious were more likely to have positive attitudes towards nutrition care. As reported in our realist review of the literature of educational interventions to improve nutrition care practice among doctors, self-efficacy in nutrition care was found to result in improved nutrition practice behaviour. It was found that it is more important to build doctors' attitude and empathy for nutrition care than increasing their knowledge only. These findings provide important information for curriculum planners and designers of nutrition care educational intervention to prioritise nutrition care self-efficacy and attitudes towards nutrition care in their design of such interventions. They should thus adopt teaching and learning strategies that will help students and doctors alike to acquire appropriate skills, develop positive attitudes and build self-efficacy/confidence in nutrition care.

Having considered their nutrition education during medical training to be inadequate, practicing doctors considered a number of continuing education in nutrition training and learning resources to be effective and demonstrated their willingness to adopt them in the future if made available. These included short nutrition seminars or lectures; online nutrition courses designed for doctors; dietician/nutritionist facilitated workshops for doctors; continuing medical education conferences on nutrition with continuing professional development (CPD) credits for participation; making access to nutrition-related journal articles; nutrition newsletters and nutrition information on patient handouts. These findings demonstrate their high interest and a favourable attitude towards improving their current nutrition care competencies. It is thus imperative for medical educators, nutrition care professionals and researchers to design and make available to doctors such continuing nutrition education programmes. The availability of these programmes will

provide avenues for doctors to learn more about nutrition during practice. Medical licensing bodies, such as the Ghana Medical and Dental Council, should assign continuing professional development (CPD) credits to nutrition-related continuing education programmes in a bit to encourage doctors to participate in such programmes.

Having undertaken a comprehensive needs assessment of nutrition education, barriers and nutrition care we undertook a review of the literature to identify appropriate interventions that can be designed to help improve nutrition education and nutrition care practice. Following a realist approach (a theory-driven, non-traditional systematic review) the review brought to bear the characteristics of educational interventions that work to improve nutrition care and delivery as well as those that do not work. The findings have increased our understanding of the context within which educational interventions can improve nutrition care competence and practice, and the mechanisms through which these educational interventions work and the kind of outcomes that can be generated through those educational interventions. In addition these findings are transferrable across settings to better support nutrition education to improve nutrition care competence and practice of nutrition care. The realist approach also showed that educational interventions to improve nutrition care competence and delivery are complex and do not operate in a linear fashion. Designers of such educational interventions should thus be aware of their complex nature which should be highlighted during planning, designing and implementation stages of such interventions.

The review also resulted in the development of a conceptual model of how educational interventions operate to bring about outcomes. It is a framework of the conditions, circumstances, mechanisms and context within which educational interventions work to bring about short-and long-term outcomes. This finding provides a framework that will inform the design of future educational interventions to improve nutrition care competencies and delivery. It will help designers of educational interventions to map out the essential components of such interventions in order to benchmark their effectiveness.

## **Target groups**

The research presented in this doctoral thesis serves as a resource for varied target groups. They include: curriculum planners and managers, researchers in health professions education and nutrition, medical students, doctors in practice, faculty (clinical and pre-clinical teachers), and nutritionists, dieticians, and other health professionals.

### *Curriculum planners and managers*

In this thesis medical students identified a number of barriers that did not allow for effective nutrition education. Paramount among these was the lack of priority for nutrition education. For nutrition education to gain priority in medical education, it is important for nutrition education to be established and recognized as a discipline within the medical

curriculum that will enable faculty to specialize in nutrition. Curriculum planners and managers are pivotal in this process.

### *Researchers in health professions education and nutrition*

The research presented in this thesis sets the background for researchers in health professions education and nutrition to conduct further research in nutrition education and to come out with interventions that will improve nutrition care and its delivery. A number of future research directions and ideas have been presented in this thesis that can be utilized by researchers in health professions education and nutrition to bring about evidence that will contribute new knowledge to the literature on nutrition education.

### *Medical students*

Four studies presented in this studies were conducted among medical students. Two were quantitative cross-sectional studies and the other two were qualitative. The quantitative studies investigated students' nutrition care competencies, self-efficacy, quality and quantity of their nutrition education, and their preparedness to provide nutrition care in the general practice setting. The findings of these studies brought to the fore the inadequacy of nutrition education in the medical curriculum resulting in medical students feeling inadequately prepared, less competent and self-efficacious to provide nutrition care. It also demonstrated students' willingness and interest to learn more about nutrition. The qualitative studies explored the views, opinions and perspectives of medical students regarding the role of nutrition education in their training as well as their perception of the roles and responsibilities of doctors in the provision of nutrition care. Furthermore they explored students' views, opinions and perspectives regarding barriers to effective nutrition education and suggested strategies to overcome such barriers. The findings of these studies have shown that medical students are important stakeholders of the curriculum and can make important contributions towards improving their curriculum and subsequently the learning environment. It thus implies that students should be involved in any efforts that are geared towards planning, review and implementation of the curricula in health professions education. Furthermore, understanding the opinions of medical students regarding the role of nutrition care may help to gauge their attitudes and the acceptability of nutrition education. Our findings also serve as a proxy for medical students' readiness to embrace educational interventions to improve nutrition education, nutrition care competence and practice when they become medical doctors. Importantly, they recognise the role of other members of the multidisciplinary healthcare team, such as dietitians and/or nutritionists, thereby encouraging inter-professional healthcare.

### *Doctors in practice*

One study in this thesis evaluated practicing doctors' nutrition care practices, barriers, competencies and education in nutrition. Findings from that study showed that doctors' provision of nutrition care in the general practice setting does not meet the needs of patients. Doctors reportedly felt that the quantity and quality of nutrition care they provide fall short of the nutrition needs of their patients. They are simply unable to meet the needs of the patients regarding nutrition care. It adds to the literature that doctors recognise their inability to meet the nutrition care needs of their patients and have also demonstrated that they require further training in nutrition. These are favourable attitudes that can inform the design of future educational interventions to improve nutrition care competencies and delivery.

### *Faculty (clinical and pre-clinical teachers)*

The findings of a qualitative study of medical students' perception of barriers to effective nutrition education identified unavailability of faculty to teach nutrition as an important barrier. The role of the teacher in nutrition education and nutrition care practice is paramount. Faculty development programmes on nutrition should thus be developed. Furthermore, faculty should demonstrate to students the important role of nutrition care and create learning environments that promote the acquisition of nutrition counselling skills and the development of favourable attitudes.

### *Nutritionists, dieticians, and other health professionals*

A sense of inter-professionalism was demonstrated by both medical students and practicing doctors. Being aware of their limitations regarding nutrition care and also recognising the important role of the nutritionist/dieticians to patient care, doctors reportedly referred patients to nutritionists/dietician for specialist dietary care. Again both medical students and practicing doctors alike considered nutritionists/dieticians as important nutrition training/learning resources and preferred them to facilitate nutrition training workshops. No wonder students suggested faculty to collaborate with the nutritionists/dieticians in their training. These findings demonstrate the need for collaboration among faculty, clinical educators, nutritionists/dieticians and other healthcare professionals in efforts that are geared towards improving nutrition education and care. There is thus the need for multidisciplinary collaboration at all levels of curriculum design, teaching, learning and clinical practice. In addition there is the need for medical doctors, nutritionists, dieticians and other healthcare professionals to come together and begin to discuss, identify and align the roles and responsibilities of the doctors and other healthcare professionals regarding the provision of nutrition care.

*Activities*

As an immediate activity, the results of this thesis will be presented to the faculty of the University for Development Studies, School of Medicine and Health Sciences (UDS-SMHS) for them to appreciate the situation of nutrition education in the curriculum and also deliberate on how best nutrition education can be incorporated into the curriculum. The research presented in this thesis consists of empirical studies undertaken in the context of a single undergraduate medical programme and among practicing doctors in Ghana. We will thus explore the generalizability of our findings in other health care programmes, both at home and internationally. A number of the studies have been presented at international conferences on medical and nutrition education. In addition, all studies presented in this thesis except one have been published in journals of varied disciplines including health professions education, nutrition, medical and public health.



